

*cancel A1*  
position  $\phi$  of the area about a rotational center defined as a foot of the rotational axis on the surface of the plane diffraction grating.

*A2*  
6. (Amended) An optical system comprising:  
a plane diffraction grating having grooves on a surface of the plane diffraction grating whose profile at an area is determined depending on a rotational position  $\phi$  of the area about a rotational center defined as a foot of a rotational axis which is normal to the surface;  
a mechanism for rotating the plane diffraction grating about the rotational axis;  
an incidence optical system for casting a converging beam of light on a point of the surface of the plane diffraction grating, the point being apart from the rotational center.

*A3*  
11. (Amended) A method of producing a plane diffraction grating having grooves on a surface thereof whose profile at an area is determined depending on a rotational position  $\phi$  of the area about a rotational center defined as a foot of a rotational axis, the method comprising the steps of:

coating a substrate with a photo-resist layer and forming a photo-resist mask from the photo-resist layer according to a preset pattern of groove arrangement;  
covering the photo-resist mask with a sector mask having an opening of a narrow sector whose apex is set at the rotational center;  
etching the substrate over the sector mask with an appropriate etching condition depending on a rotational position of the sector mask about the rotational center;

AMENDMENT

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rotating the sector mask by an angle of the apex of the narrow sector; and

repeating the etching process and the mask rotating process until the narrow sector sweeps

the surface of the substrate.

considered  
A3

